

**REMARKS**

By this reply, claims 1, 9, 17 and 18 have been amended; and new claims 19-22 have been added, leaving claims 1-6, 9-14 and 16-22 pending in the application. No new matter has been added by the claim amendments. Favorable consideration and allowance are respectfully requested in view of the above amendments and the following remarks.

**Telephonic Interview**

Applicants thank Examiner Simone for conducting a telephonic interview with their undersigned representative on June 27, 2007. Applicants' separate record of the substance of the interview is contained in the following remarks.

**Restriction Requirement**

In the Office Action, claims 16-18 were withdrawn from consideration. These claims were added in the Amendment After Final Rejection filed on September 5, 2006. As was discussed in that Amendment, the addition of 16-18 claims was discussed during the personal interview with the Examiner conducted on August 29, 2006, prior to filing of the Amendment.

Applicants submit that the subject matter of claims 16-18 is sufficiently related to the subject matter of the other pending claims, that the examination of claims 16-18 could be made without serious burden. M.P.E.P. § 803 states that "[i]f the search and examination of all the claims in an application can be made without serious burden, the examiner must examine them on the merits, even though they include claims to distinct or independent inventions." It is respectfully requested that this

policy be applied by the Office in the present application in order to avoid unnecessary expense to Applicants and duplicative examination by the Office.

### **Rejection Under 35 U.S.C. § 103**

Claims 1-6 and 9-14 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,168,141 to Zimmer ("Zimmer"). The rejection is respectfully traversed.

Claim 1, as amended, recites an apparatus in an infuser for a liquid food product. The infuser includes, *inter alia*, a pressure vessel with an inlet for the product located in its upper region and an outlet for the product located in its lower region, the product inlet being disposed to divide the product entering into the pressure vessel into small droplets, and the droplets fall freely through the pressure vessel until the droplets reach a liquid surface in the lower region below the guide plate (emphasis added).

For example, the embodiment of the apparatus shown in Figures 1 and 2 of the present application is designed so that product droplets will "fall freely" in the pressure vessel 1 after being introduced into the pressure vessel via the product inlet in the upper region. As also recited in claim 1, steam, on entering the pressure vessel, is downwardly directed and is at a speed of  $< 2$  m/sec, and the pressure vessel is designed so that the product droplets are treated by the steam below the guide plate. As explained at page 6, lines 19-23 of the specification, the combination of steam speed and direction minimizes the risk that the steam will disturb the free fall of the product droplets through the pressure vessel. Consequently, splashing of the product and fouling of the product on the pressure vessel walls will be reduced.

Applicants respectfully submit that Zimmer does suggest an apparatus including every feature recited in claim 1. Zimmer's apparatus includes a fluent distribution device 14 including multiple nozzles with openings 60. See Figures 1 and 4. As shown in Figure 1 of Zimmer, the food product is sprayed, in a turbulent manner, on the interior surfaces of the partition wall 30. The food product then flows downwardly as a film on the partition wall to the open end at lower edge 40 in a turbulent manner, while steam is flowed upwardly. At column 2, lines 57-65, Zimmer discloses:

The combination and sequence of high turbulence jet spray, impact on a wall and forced falling film flow down that same wall is employed to maintain turbulence in the flow during the entire heating process and prevent formation of a liquid stream or film which allows temperature differences to exist between a hotter surface of the stream and cooler core. The heating process is completed as the product leaves the product chamber typically less than one second after entering it.

(Emphasis added).

Zimmer does not suggest the apparatus recited in claim 1 in which the droplets fall freely through the pressure vessel until reaching a liquid surface in the lower region below the guide plate. In contrast, Zimmer would have led one skilled in the art away from modifying the apparatus in a manner such that the food product is not sprayed onto the wall so that it forms a falling film flow down the wall, but instead falls freely and undisturbed through the vessel 10 until it reaches a liquid surface in a lower region below a guide plate. Accordingly, claim 1 is patentable over Zimmer. Claims 2-6, which depend from claim 1, are also patentable over Zimmer for at least the same reasons as those for which claim 1 is patentable.

Applicants submit that Zimmer also does not suggest the apparatus recited in claim 9 for reasons stated above. Claims 10-14, which depend from claim 9, are

also patentable over Zimmer for at least the same reasons as those for which claim 9 is patentable. Therefore, withdrawal of the rejection is respectfully requested.

### **Claims 16-18**

Claim 16 recites an apparatus in an infuser for a liquid food product. The infuser comprises a pressure vessel with an inlet for the product located in its upper region and an outlet for the product located in its lower region, the product inlet being disposed to divide the product entering into the pressure vessel into small droplets, and the infuser also including an inlet for steam disposed such that steam enters into the upper region of the pressure vessel through a concentric distribution chamber defined by a wall of the pressure vessel, a guide plate and at least one foraminated plate, the guide plate having a lower end, and the pressure vessel having a constant inner diameter from the lower end of the guide plate to above the lower end (emphasis added).

As shown in Figure 1, the guide plate 11 has a lower end and the pressure vessel 1 has a constant inner diameter from the lower end of the guide plate 11 to above the lower end, i.e., in the vertically upward direction from the lower end.

In contrast, Zimmer's partition wall 30 defines a product treatment chamber 31, including the inner diameter of the chamber 31. The partition wall 30 has a lower end. The inner diameter of the chamber 30 defined by the conically shaped wall portion 36 increases in the direction from the lower end of the partition wall 30 to above the lower end. As such, Applicants respectfully submit that Zimmer does not suggest the apparatus recited in claim 16 for at least this reason.

Claim 17, as amended, recites that the apparatus comprises a product distribution chamber in the upper region of the pressure vessel, the product distribution chamber including a planar lower wall having a plurality of holes through which the product passes and forms the small droplets in the pressure vessel. In the embodiment shown in Figure 1, the product distribution chamber 3 includes a lower planar wall 4 with a plurality of holes through which product droplets are introduced. See page 6, lines 4-6, of the specification. Zimmer also does not suggest the features of claim 17.

Claim 18, as amended, recites that the lower wall is centrally located in the upper region of the pressure vessel and the droplets fall freely from the lower wall through the pressure vessel until the droplets reach a liquid surface in the lower region below the guide plate. Zimmer also does not suggest the features of claim 18.

### **New Claims**

New Claims 19 and 20 depend from claim 1, and claims 21 and 22 depend from claim 9. Claims 19-22 are also patentable.

**Conclusion**

For the foregoing reasons, allowance of the application is respectfully requested. If there are any questions concerning this response, the Examiner is respectfully requested to contact the undersigned at the number given below.


Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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6/29/07

By: \_\_\_\_\_



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